Implementation Plan

Production Sector

Company Information

Partner Address Label Here

If the information provided above is incorrect, please make corrections below.

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Gas Star Contact:	Andy Cobb
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Implementation Plan Elements

ELEMENT 1 Best Management Practices (BMPs)

The following BMPs have been identified as significant opportunities to cost effectively reduce methane emissions from the production sector. They were selected based on their applicability to the industry, economic feasibility, and cost-effectiveness. There are 2 core BMPs for the production sector:

BMP 1 Identify and replace high-bleed pneumatic devices
BMP 2 Install flash tank separators on glycol dehydrators

For detailed information on these BMPs, please refer to the Lessons Learned publications on the Natural Gas STAR Web site: <www.epa.gov/gasstar/lessons.htm>.

ELEMENT 2 Partner Reported Opportunities (PROs)

Current partners have reported many processes and technologies that are considered "other Best Management Practices" by the program. New partners are encouraged to evaluate and report current and new practices or technologies that cost effectively reduce methane emissions. PROs are made available to all partners, and can be viewed at: <www.epa.gov/gasstar/pro/index.htm#table>.

ELEMENT 3 Inventory Past Reductions

Partners are encouraged to report past methane emission reductions back to 1990. Accounting for these historical reductions will create a permanent record of your company's methane emission reduction efforts. More information is available in the Spring 1999 Natural Gas STAR Partner Update, which can be viewed at: <www.epa.gov/gasstar/newsletters.htm>.

The Implementation Plan is designed to be a dynamic tool for Natural Gas STAR Partners to plan their program activities. As company priorities and plans shift over time, the Implementation Plan may be revised or updated by submitting a new form to the program.

ELEMENT 1
Best Management Practices

BMP 1
Identify and Replace High-Bleed Pneumatic Devices

Pneumatic devices used to control and monitor gas and liquid flows and levels in dehydrators and separators, temperature in dehydrator regenerators, and pressure in flash tanks emit large amounts of methane into the atmosphere. Replacing these with low- or no-bleed devices reduces or eliminates emissions and improves safety.

Estimated Reduction Potential
124 Mcf/year/device

Will you be implementing this BMP? ☒ *Yes* ☐ *No*

If no, why?

- ☐ *Not cost effective*
- ☐ *May consider at a later date*
- ☐ *Other* ____

Please describe: ____

If yes, at what scale will you be implementing this BMP?

- ☐ *Company Wide*
- ☒ *Pilot Project*
- ☐ *Other*

Please describe: Will survey San Juan and Permian Basin areas to determine number of devices. Will install no-bleed devices on all new installations and when replacements are needed on exisiting equipment.

Activity Summary

Number of high-bleed pneumatic devices in system? TBD

Number of high-bleed pneumatic devices to be replaced? ____

Replacement Schedule

Number of high-bleed pneumatic devices to be replaced by the end of:

Year 1: ____ *Year 2:* ____ *Year 3:* ____ *Year 4:* ____

Additional Information on Anticipated Plans and Projects

If additional space is needed, please continue on the back.

BMP 2
Install Flash Tank Separators on Glycol Dehydrators

Installing a flash tank separator in a glycol dehydrator facilitates the removal of methane and natural gas liquids from the glycol stream. The recovered gas can be put back into the pipeline, used as a fuel on-site, or flared.

Estimated Reduction Potential
170 scf/MMcf of throughput

Will you be implementing this BMP? ☐ Yes ☒ No

If no, why?

- ☐ Not cost effective
- ☒ May consider at a later date
- ☐ Other ____

Please describe: ____

If yes, at what scale will you be implementing this BMP?

- ☐ Company Wide
- ☐ Pilot Project
- ☐ Other ____

Please describe: *At present Energen Resources does not operate a substanial number of glycol dehyd's to consider this BMP.*

Activity Summary

Number of glycol dehydrators currently equipped with flash tank separators ____

Number of glycol dehydrators suitable for flash tank installation? ____

Replacement Schedule

Number of flash tank separators to be installed by the end of:

Year 1: ____ Year 2: ____ Year 3: ____ Year 4: ____

Additional Information on Anticipated Plans and Projects

If additional space is needed, please continue on the back.

ELEMENT 2
Best Management Practices

PROs

Your company may take advantage of additional technologies or practices to reduce methane emissions. These can be reported to Natural Gas STAR as PROs. Following is a list of some of the PROs that have been reported by other Gas STAR partners, which may be applicable to your operations (for more information on these PROs, please view: <www.epa.gov/gasstar/pro/index.htm> and <www.epa.gov/gasstar/lessons.htm>):

- Install Vapor Recovery Units (VRUs)
- Install flares
- Install electronic safety devices
- Install instrument air systems
- Eliminate unnecessary equipment and/or systems
- Install plunger lifts in gas wells

PROs you will be implementing	Please describe
PRO *Install VRU's* At what scale will you be implementing this BMP? ☐ Company Wide ☒ Pilot Project ☐ Other _____.	*Energen has been and will continue to be pro-active in VRU installation. Every new and existing installation will be evaluated for VRU applicability. Primary criteria will be based produced fluids volumes into facility, plus RVP of produced hydrocarbon.*
PRO *Install flares* At what scale will you be implementing this BMP? ☐ Company Wide ☒ Pilot Project ☐ Other _____	*If VRU installation is not feasible due to produced volumes into facility and where the RVP's of the liquids are high enough to support combustion, consideration of flare installation will be undertaken.*
PRO *Install Instrument air systems* At what scale will you be implementing this BMP? ☐ Company Wide ☒ Pilot Project ☐ Other _____	*Evaluation of instrument air will primarilly based on the quality of the produced gas supplying instrument air. Should contaminants in the produced gas stream casue operational problems with dumps and controllers, instrument air will be installed.*
PRO *Install plunger lifts* At what scale will you be implementing this BMP? ☐ Company Wide ☒ Pilot Project ☐ Other _____	*Energen has actively pursued plunger lift installations in the San Jaun Basin of New Mexico and will continue to do so. Also consideration of installing pumping units in lieu of "blowing" well down is also possible when feasible.*

ELEMENT 3
Inventory Past Reductions

An inventory of past reductions will help to create a permanent record of your past efforts.

As a first step, many new partners find it useful to inventory and document past methane emission reduction efforts. The inventory process helps companies quantify the success of their past activities and target future emission reduction efforts. Historical emission reductions identified as part of the inventory process can be reported to the Gas STAR Program.

Will you inventory past activities to include in your annual report? ☒ Yes ☐ No

If yes, please describe your company's plans for reviewing past emission reduction activities.

Review production sector BMP's and PRO's that have been instituted by ERC in San Juan and Permian areas prior to STAR implementation; make masonalbe calculations based on indusrty criteria and submit.

The Natural Gas STAR Program thanks you for your time.

Please send completed forms to:

Regular Mail
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Washington, DC 20460

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